

The opinion in support of the decision being entered today is *not* binding  
precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DAVID J. LINDNER

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Appeal 2007-0334  
Application 09/611,920  
Technology Center 2100

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Decided: July 20, 2007

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Before JOSEPH F. RUGGIERO, HOWARD B. BLANKENSHIP,  
and ALLEN R. MACDONALD, *Administrative Patent Judges*.

BLANKENSHIP, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal involves claims 1-21, 23-27, 29-33, and 35-44, the only  
claims pending in this application. We have jurisdiction under 35 U.S.C.  
§§ 6(b), 134(a).

## INTRODUCTION

Lightweight Directory Access Protocol (LDAP) is an industry-standard software protocol that enables a person to locate individuals, as well as other resources such as files and devices, within a network.

(Specification 2.) In Appellant's invention, to alleviate the burden on the directory server, an LDAP caching daemon 210 (Fig. 2) is a multi-threaded Internet UNIX daemon, which accesses data from the directory server 110. (*Id.* 8.) Claims 1 and 16 are illustrative:

1. A method for accessing a directory server, the method comprising:  
  
simultaneously maintaining a first plurality of connections between the directory server and a caching daemon;

- determining if an application is requesting information from the directory server;

- determining if the requested information is stored in the caching daemon in response to determining that the application has requested information; and

- sending the requested information to the application.

16. a caching daemon, comprising:

- a data cache adapted to store a subset of information from a directory server; and

- a controller adapted to establish and maintain a first plurality of connections to the directory server, determine if an application is requesting information from the directory server, determining if the requested information is stored in the data cache, and send the requested information to the application.

The Examiner relies on the following prior art references to show unpatentability:

Luotonen	US 5,864,852	Jan. 26, 1999
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Sophie Cluet et al. (Cluet), *Using LDAP Directory Caches*, Proceedings of the Eighteenth ACM-SIGMOD-SIGACT-SIGART Symposium on Principles of Database Systems, 273-284 (May 1999).

The rejections as presented by the Examiner are as follows:

1. Claims 16-20, 33-38, and 42-44 are rejected under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.
2. Claims 1-21, 23-27, 29-33, and 35-44 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cluet and Luotonen.

## OPINION

### *Section 101 Rejection*

The Examiner rejects claims 16-20, 33-38, and 42-44 under 35 U.S.C. § 101 as being not directed to statutory subject matter. According to the Examiner, a daemon is a process that runs in the background and performs a specified condition at predefined times or in response to certain events. The “caching daemon” as claimed is software per se, not defining any structural and functional relationship between the program and other claimed elements of a computer that permit the program’s functionality to be realized.  
(Answer 3.)

Appellant submits that instant claim 16 is representative of the claims subject to the § 101 rejection. (Br. 18.) According to Appellant, the non-final rejection mailed March 7, 2005 focused exclusively on the preamble term “caching daemon,” ignoring the “mandate” of the *Manual of Patent*

*Examining Procedure* (MPEP) to review the claimed invention as a whole. Appellant quotes from claim 16 and submits that the claim is not directed to abstract ideas. Rather, the claim “produces a useful result of sending requested information to the requesting application.” (Br. 19-20.)<sup>1</sup>

In a § 101 analysis, the critical question must be answered: “What did the applicant invent?” *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1059, 22 USPQ2d 1033, 1038 (Fed. Cir. 1992) (quoting *In re Grams*, 888 F.2d 835, 839, 12 USPQ2d 1824, 1827 (Fed. Cir. 1989)). A § 101 inquiry is directed to the determination of whether the claimed subject matter as a whole is a disembodied mathematical concept representing nothing more than a “law of nature” or an “abstract idea,” or if the mathematical concept has been reduced to some practical application rendering it “useful.” *AT&T Corp. v. Excel Communications Inc.*, 172 F.3d 1352, 1357, 50 USPQ2d 1447, 1451 (Fed. Cir. 1999) (citing *In re Alappat*, 33 F.3d 1526, 1544, 31 USPQ2d 1545, 1557 (Fed. Cir. 1994) (en banc)).

Consistent with the Examiner’s position, a “daemon” may be defined as “[a]n agent *program* which continuously operates on a UNIX server and which provides resources to client systems on the network. Daemon is a background *process* used for handling low-level operating system tasks.”

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<sup>1</sup> Appellant also reproduces (Br. 20) a claim that is contained, purportedly, in a U.S. patent; a claim that on its face is directed to entirely different subject matter from the instant claims. The fact that Appellant may view the purported patent claim as “no less statutory” than instant claim 16 is not relevant to our review of the instant rejection, absent the offer of some rationale (or hint) as to why Appellant holds the view. Further, any complaint about the “timing” of the instant rejection (*see id.*) is a matter for petition, rather than appeal. We review the “propriety” of the rejection (*see id.*) in this appeal.

*Newton's Telecom Dictionary* 188 (17th ed. 2001) (emphasis added).<sup>2</sup> “In the illustrated embodiment, the LDAP caching daemon 210 is a multi-threaded Internet UNIX daemon, and accesses data from the directory server 110 via a plurality of connections represented at 215.” (Specification 8: 4-7; Fig. 2.)

In accordance with the illustrated embodiment, the LDAP caching daemon 210 [Fig. 2] resides between the directory server 110 and a Security Integration Architecture (SIA) layer 220 of the OS [operating system]. The plurality of client server applications 120 that run in the SIA layer 220 of the OS send data requests that are intended for the directory server 110 to the LDAP caching daemon 210. These applications 120 in the SIA layer 220 may include, file transfer protocol (ftp), telnet, rlogin, and CDE, for example. It will be appreciated, however, that the applications 120 may include various other application types running on the client server, and, thus, need not necessarily be limited to the aforementioned examples.

(Specification 8: 15-20.)

The caching daemon described in the Specification thus appears to communicate with applications within a conceptual or logical (SIA) layer within an operating system, rather than by physical transfer of data between physical entities. The “daemon” described in the Specification appears to be consistent with the artisan’s understanding of a daemon as a program or process.

Appellant faults the Examiner for allegedly focusing only on the preamble of representative claim 16. Yet, Appellant does not dispute that a daemon is a type of process. Claim 16, however, is not directed to a

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<sup>2</sup> A copy of the text page should mail as an attachment to this opinion.

statutory process, as the claim does not set forth any steps for implementing a process. If we assume that the body of the claim is directed to a machine, we observe that the claim recites a caching daemon (i.e., a “process”) “comprising” two elements of a machine -- a data cache and a controller. The claim, if it relates to statutory subject matter, is unpatentable for indefiniteness under 35 U.S.C. § 112, second paragraph, because it sets forth elements of two separate statutory classes in the same claim. *See IPXL Holdings LLC v. Amazon.com, Inc.*, 430 F.3d 1377, 1384, 77 USPQ2d 1140, 1145 (Fed. Cir. 2005) (a claim that recites both a system and the method for using that system does not apprise a person of ordinary skill in the art of its scope, and is thus invalid under § 112, second paragraph).

We read the claim, consistent with the Specification, as setting forth a process or program (a daemon) that comprises two processes or programs -- a data cache “adapted to” perform recited functions if and when reduced to the practical application of being implemented on a machine, and a controller “adapted to” perform recited functions if and when reduced to the practical application of being implemented on a machine. Instant Figure 2 (Specification 10: 4-11, as originally filed), for example, depicts a Caching Daemon (a process) as a box that contains two other boxes (Controller 235 and Data Cache 230). The “connections” 225 are merely conceptual representations of information that may pass between processes -- i.e., between the daemon and client applications A through C. (*See, e.g.*, Specification 9: 1-4 (describing a “connection” as being established between client applications in the SIA layer and the caching daemon.)) The term “directory server” could refer to a physical server (a machine) or to a set of

processes that are adapted to run on such a machine. Since Daemon 210 is depicted as directly connected to Directory Server 110, the server also appears not to be described as a machine. The described details of connections 215 between the daemon and the server (e.g., Specification 9-10 as originally filed) are not to the contrary.

We thus agree with the Examiner that the “caching daemon” as claimed is software per se, not defining any structural and functional relationship between the program and other claimed elements of a computer that permit the program’s functionality to be realized. The “useful result” alleged by Appellant -- that of sending requested information to the requesting application -- merely relates to the abstract idea of information exchange between processes not resident or implemented in any tangible medium. The claimed invention as a whole has not been reduced to some practical application rendering it “useful.” We sustain the § 101 rejection of claim 16, and of claims 17-20, 33-38, and 42-44, which fall with claim 16.

#### *Prior Art Rejection*

The Examiner rejects claims 1-21, 23-27, 29-33, and 35-44 under 35 U.S.C. § 103(a) as being unpatentable over Cluet and Luotonen. Appellant submits in the Brief that claims 1 and 21 are representative.

Cluet describes the use of LDAP (Lightweight Directory Access Protocol) network directories. A specific and relevant teaching of Cluet appears at the second paragraph of page 273. According to the reference, to achieve fast performance and high availability in LDAP-based network directory systems, it is desirable to cache information “close to” the

applications that access the directory information. “Such client caching” has been established as an effective way to scale the performance of a client-server database architecture.

Luotonen teaches (col. 1, ll. 25-38) that it is necessary to have, due to the continuing growth of the World Wide Web, intermediate servers that perform caching such that documents may be quickly accessed from a local file system, instead of being retransferred from the original server. The “caching proxy servers” reduce network load, and shorten response times to the user.

The combined teachings of the references would thus have suggested to the artisan the use of a caching proxy server in the LDAP-based network directory systems described by Cluet.

Appellant argues, however, that the combination fails to teach or suggest “simultaneously maintaining a first plurality of connections between the directory server and a caching daemon” as recited in claim 1. Appellant submits, in fact, that each reference “teaches away” from the limitation.

With respect to Luotonen, Appellant submits that the reference teaches that connections between a proxy server and remote server are only temporarily maintained to perform up-to date checks, citing column 6, line 66 through column 7, line 4. (Br. 13-14.) Appellant deems that disclosure a “teaching away” from the recitation in controversy.

The argument fails for several reasons. First, the rejection of claim 1 does not rely on the implementation details of the particular devices described in the disclosure of Luotonen’s invention. Rather, the rejection



refers to the general knowledge in the art of the advantages of using caching proxy servers.

Second, Appellant's position seems not to appreciate the broad scope of the claim 1 recitation. The claim does not address how long the connections are maintained. The claim does not preclude "temporarily maintained" connections, but only requires that a plurality (i.e., at least two) of the connections be "simultaneously" (i.e., at the same time) maintained.<sup>3</sup> "What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1742, 82 USPQ2d 1385, 1397 (2007).

Appellant does not appear to rely on having more than one connection between a directory server and a caching daemon for patentability. In any event, to one skilled in the art, two connections would have been at least as obvious as one connection, perhaps more, because in general two connections can send (roughly) twice the amount of content than one in the same period of time. Moreover, Luotonen at column 6, line 65 through column 7, line 8 speaks of a single connection as it relates to the trivial case of checking for updates for a single document, which at least suggests that more than one connection would be maintained at the same time when multiple documents or databases are updated in the cache.

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<sup>3</sup> The claim does not require much of a second connection, because there is no requirement that a second connection be used. There is, in fact, no requirement in the claim that *any* connection between the directory server and the caching daemon be used. The claim does not specify how requested information is sent to the application. The information would be sent over a link between the caching daemon and the application when requested information is stored in the caching daemon.

Third, and most important with respect to the “teaching away” argument, that Luotonen does not expressly describe maintaining more than one connection between a directory server and a caching daemon is simply not a “teaching away” for maintaining two. “A reference may be said to teach away when a person of ordinary skill, upon [examining] the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *Para-Ordnance Mfg., Inc. v. SGS Importers Int’l, Inc.* 73 F.3d 1085, 1090, 37 USPQ2d 1237, 1241 (Fed. Cir. 1995) (quoting *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994)). Appellant has not identified anything in the reference that would warn or discourage the artisan from maintaining two connections between a directory server and a caching daemon.

We also find Appellant’s argument that Cluet “teaches away” from the invention unpersuasive. We agree to the extent that the reference may be read as teaching the reduction of client-server communications, by caching information close to the client applications that access directory information. But simultaneously maintaining a plurality of connections between a directory server and caching daemon *would* be expected to reduce client-server communications. We disagree that Cluet teaches that the caching must be done by the client; the express teaching is that client caching is the caching of information “close to” the applications that access the directory information. Far from a “teaching away,” placing the cache on a caching proxy server, as taught by Luotonen, is within the express teachings of Cluet.

Appellant's arguments in support of claim 21, with respect to the alleged "teaching away" of the references, are equally unpersuasive.

Appellant adds the argument, in support of claim 21, that the combination fails to teach an LDAP caching daemon. Appellant submits that Luotonen teaches a proxy server for URLs, which is an observation not responsive to the rejection that has been applied. Cluet teaches LDAP directory caches. Luotonen reflects the artisan's knowledge that a caching proxy server may be implemented as a caching daemon (col. 1, ll. 25-38; col. 2, ll. 9-15). Moreover, even if the combination would have suggested the further refinements taught by Luotonen, Appellant has not shown how the further teachings relating to URLs might be inconsistent with the LDAP caching daemon as claimed.

We have considered all of Appellant's arguments in response to the rejection over the prior art. We sustain the rejection of claims 1-21, 23-27, 29-33, and 35-44 under 35 U.S.C. § 103(a) as being unpatentable over Cluet and Luotonen.

*New Ground of Rejection -- 35 U.S.C. § 112, second paragraph*

We enter the following new ground of rejection against the claims in accordance with 37 C.F.R. § 41.50(b): Claims 6-15 and 27-32 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Independent claims 6 and 27 each purport an "apparatus" comprising at least a "caching daemon." However, as established on this record (see our discussion of the § 101 rejection, *supra*), a "daemon" is a program or

process. The subject matter of the claims, and their depending claims, is thus indeterminate.

Independent claim 11 is drafted in a means-plus-function format, as permitted under 35 U.S.C. § 112, sixth paragraph. The scope of the claimed elements is thus limited to the corresponding structures in the disclosure and their equivalents. The limitations under 35 U.S.C. § 112, sixth paragraph, must be interpreted by reference to the corresponding disclosure. *See, e.g., In re Lonardo*, 119 F.3d 960, 967, 43 USPQ2d 1262, 1267 (Fed. Cir. 1997) (citing *In re Donaldson Co.*, 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1849 (Fed. Cir.1994) (en banc)); *In re Alappat*, 33 F.3d 1526, 1541, 31 USPQ2d 1545, 1555 (Fed. Cir. 1994) (en banc).

In the Brief (7-8), Appellant points to disclosure in the Specification that purportedly describes structure corresponding to the “means” elements of claim 11. The corresponding description in the Specification is directed to, at best, software per se. Lack of any structure in the disclosure corresponding to the “means” indicates that the claims fail to pass muster under 35 U.S.C. § 112, second paragraph. *See, e.g., Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d 1374, 1381-82, 53 USPQ2d 1225, 1230 (Fed. Cir. 1999); *In re Dossel*, 115 F.3d 942, 944-46, 42 USPQ2d 1881, 1883-85 (Fed. Cir. 1997). *See also Biomedino, LLC v.*

*Waters Technologies Corp.*, No. 2006-1350, 2007 WL 1732121 (Fed. Cir. Jun. 18, 2007).<sup>4</sup> Claim 11 and its depending claims are thus indefinite.

### CONCLUSION

In summary, the rejection of claims 16-20, 33-38, and 42-44 under 35 U.S.C. § 101 as being directed to nonstatutory subject matter is affirmed. The rejection of claims 1-21, 23-27, 29-33, and 35-44 under 35 U.S.C. § 103(a) as being unpatentable over Cluet and Luotonen is affirmed.

A new rejection of claims 6-15 and 27-32 under 35 U.S.C. § 112, second paragraph, is set forth herein.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b) (2006). 37 C.F.R. § 41.50(b) provides “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.”

37 C.F.R. § 41.50(b) also provides that the Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or

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<sup>4</sup> Software may be considered structure, or *part* of a structure, when embodied in a tangible medium. See, e.g., *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210-20, 68 USPQ2d 1263, 1267-75 (Fed. Cir. 2003) (claims indefinite because alleged corresponding structure in specification for claimed “means for converting” was a frame grabber, computer video processor, and software routines (not described) for performing the conversion).

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both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED -- 37 C.F.R. § 41.50(b)

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Published by CMP Books  
An imprint of CMP Media Inc.  
Converging Communications Group  
12 West 21 Street  
New York, NY 10010

For individual or quantity orders  
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Web: www.cmpbooks.com  
Distributed to the book trade in the U.S. and Canada by  
Publishers Group West  
1700 Fourth St., Berkeley, CA 94710  
Phone: 510-528-1444  
ISBN Number 1-57820-069-5

February 2001

Seventeenth Edition

Matt Kelsey, Publisher  
Christine Kern, Manager  
Ray Horak, Managing Editor  
Omar Mirabel, Cover Artist  
Danel Roldan, Inside Layout Artist

Manufactured in the United States of America  
Van Hoffmann Graphics  
Owensville, MO 65066

